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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LEE, BENJAMIN C	
ART UNIT	**PAPER NUMBER**
2632	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/837,228	POPP ET AL.	
	Examiner	Art Unit	
	Benjamin C. Lee	2632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26 and 41-61* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *41,42 and 59* is/are allowed.

6)☒ Claim(s) *1-26,43-58,60 and 61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/19/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/19/05 has been entered.

Claim Status

2. Claims 1-26 and 41-61 are pending.

Claim Objections

3. Claims 18 and 52 are objected to because of the following informalities: Claim 52 is a redundancy of claim 18. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. Claims 1-8, 18-23, 43-49, 52-55 and 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. (US 4,058,167) in view of Powell et al. (WO93/12839).

1) Regarding claim 1:

Granek et al. discloses a system for detecting and suppressing a fire condition in a storage unit (compartment or room in Fig. 1 capable of storage) for storing objects in a storage area containing a plurality of storage units (facility/complex as a whole shown in Fig. 1), the system comprising: a transmitter (16 and col. 4, lines 30-36) associated with each of at least some of the

plurality of the storage units and configured to transmit a first signal upon detection of a fire condition in a storage unit experiencing the fire condition; at least one receiver (48 and col. 4, lines 37-40) configured to detect the first signal and configured to provide a second signal (warning light 51 and audible warning device of col. 4, lines 43-50) indicating detection of the fire condition in the storage unit experiencing the fire condition; and a plurality of fire suppression devices (14), each of the fire suppression devices being associated with a storage unit (Fig. 1) and being configured to discharge a fire suppressant material into its associated storage unit upon detection of the fire condition in its associated storage unit, wherein detection of the fire condition in any one of the plurality of storage units does not necessarily result in discharging of fire suppressant material into others of the plurality of storage units (col. 4, lines 50-52 and col. 5, lines 4-19); except specifying that the stored objects are freight.

The claimed invention recited in the preamble that the storage units are "for storing freight" as an intended use. While Granek et al. discloses the intended application of the fire detection/extinguishing system to rooms in a building, small or medium-sized premises such as residential apartments and office premises (col. 1, lines 5-15), Powell et al. teaches the known intended application of a fire detection/extinguishing system to an aircraft cargo (freight) bay (storage area) (Figs. 1-2 and Abstract). In view of the teachings by Granek et al. and Powell et al., it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to apply the storage-units fire detection/extinguishing system of Granek et al. to a cargo storage area for storing freight such as taught by Powell et al. as a known intended use.

2) Regarding claim 2, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 1, including:

a) the claimed plurality of storage units (Fig. 1 of Granek et al.), plurality of transmitters (16 in Fig. 1 of Granek et al.) each associated with a storage unit;

except:

b) the claimed plurality of receivers each associated with a storage unit.

While Granek et al. teaches a single receiver 48 having decoder that associated each of the transmitters and storage units in a distinguishable manner through use of encoded transmitter first signals or first signals having different frequencies (Fig. 5; col. 4, lines 34-50 and col. 4, line 62 to col. 5, line 19), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a corresponding plurality of receivers for the plurality of transmitters as an alternative to provide the same function of distinguishing the plural transmitted first signals from each other, whereby the latter alternative can be chosen base on trivial factors such as availability of the type of receivers at hand at the time of implementation.

3) Regarding claim 3, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 2, wherein:

--the claimed each of the storage units is located at a predetermined position relative to the individual receiver associated with the storage unit is met by the fixed positions, and therefore relative positions, of the storage units and individual receiver as shown in Fig. 5 of Granek et al.

4) Regarding claim 4, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 3, except:

--the claimed wherein the second signal from a receiver is provided to a control panel that in response to the second signal identifies the storage unit experiencing the fire condition.

Granek et al. discloses that the receiver 48 is located at a control panel (55) that in response to the transmitted first signal identifies the storage unit experiencing the fire condition (Fig. 5; col. 4, lines 34-50 and col. 4, line 62 to col. 5, line 19). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use one or more relay transceivers, either hard-wired or wireless, for receiving the first signals and transmitting second signals to the control panel for identification in a system such as taught by Granek et al. and Powell et al. for application environments in which direct signal transmission is not feasible but requires relaying/retransmission in order to communicate between the storage unit transmitters and the control panel, such as due to physical or signal obstructions/interference.

5) Regarding claims 5-6, Granek et al. and Powell et al. render all of the claimed subject matter obvious as in claim 2, except:

--specifying the claimed at least some o the storage units are containers or pallets including blankets for storing the freight.

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that since freight storage units including containers or pallets including blankets for storing freight are also subjected to tire hazards, a system such as taught by Granek et al. and Powell et al. is applicable for protecting such storage units against fire hazards just as well as an intended use within the scope of the invention of the combined teachings.

6) Regarding claims 7, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 1, including:

--the claimed pressurized vessel within the storage unit and containing fire suppressant material activated and discharged by a fire detection component into the storage unit upon fire detection is met by Figs. 1-5 of Granek et al.

7) Regarding claim 8, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 1, except

--the claimed first signal is infrared.

While Granek teaches using ultrasonic or radio frequency signals, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that other wireless links, including an infrared link, can be used in a system such as taught by Granek et al. and Powell et al. without unexpected results, whereby infrared can specifically be chosen if radio or ultrasonic interference may be a potential problem in the application environment.

8) Regarding claims 18-19, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claim 1, wherein:

Since Powell et al. teaches the protection of aircraft cargo/freight, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to place the remote alarm and control panel in the aircraft cockpit where personnel is expected to be, and is applicable to aircraft cargo/freight in the configuration of a plurality of storage units in the storage area for a system such as taught by Granek et al. and Powell et al.

9) Regarding claims 20-22, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 19, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that for relatively small storage units such as containers as an intended use of the

system taught by Granek et al. and Powell et al., in order that the storage volume is not negatively impacted/reduced by being occupied by the fire suppressant and release components, they can be configured in a retractable configuration and located exterior of the container such as outside the base of the container with a hole so that the application mechanism and valve aligned with the hole will discharge fire suppressant material into the container through the hole responsive to fire detection, and to configure the valve in a retracted position prior to tire detection, but then engage the container base upon the fire detection using a piston.

10) Regarding claim 23, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 18, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that the cargo storage units in a system such as taught by Granek et al. and Powell et al. can include a pallet, and to include a fire resistant blanket for the storage unit housing/walls including its base to improve tire survivability, since fire hazard is a concern for the storage unit in a system such as taught by Granek et al. and Powell et al. by virtue of the need to implement the fire detection and suppressant system.

11) Regarding claim 43, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claim 8.

12) Regarding claims 44-49, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 43, plus the consideration of claims 2-7, respectivley.

13) Regarding claim 52, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claim 18.

14) Regarding claim 53, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 52, plus the suppressant system shown in Figs. 1 & 5 of Granek et al. including the claimed application mechanism (valve 47) in the manner claimed.

15) Regarding claim 54, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 53, plus the consideration of claim 20.

16) Regarding claim 55, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 52, plus the consideration of claim 23.

17) Regarding claims 60-61, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in the consideration of claims 1 and 4, respectively.

5. Claims 9 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al. and Eguchi (US pat. #3,909,814).

1) Regareing claim 9, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 1, while:

Eguchi teaches a bimetallic switch configured to close upon detection of the fire condition as a specific, known fire detector (Figs. 1-3). In view of the teachings by Granek et al., Powell et al. and Eguchi, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to implement the fire detector of Granek et al. and Powell et al. using a known specific sensor such as the bimetallic switch taught by Eguchi.

2) Regarding claim 50, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 43, plus the consideration of claim 9 further in view of Eguchi.

6. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al., Eguchi and Fierbaugh (US pat. #4,987,958).

1) Regarding claims 10-11, Granek et al., Powell et al. and Eguchi made obvious all of the claimed subject matter as in claim 9, while:

Fierbaugh teaches a known mounting of a bimetallic switch sensor in a container environment in which the switch extends through and contacts a surface of the container (21 in Figs. 1 & 3). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that when applying the fire sensing bimetallic switch of a system such as taught by Granek et al., Powell et al. and Eguchi to the storage unit environment, that the switch needs to be physically mounted somewhere, and the sensor has to be operably coupled to the environment, such as by extending through and in contact with a surface of the storage unit, especially if the storage unit is relatively small. Furthermore, Fierbaugh teaches such known mounting as a known way for mounting the bimetallic switch sensor to a container environment.

2) Regarding claims 12-13, Granek et al., Powell et al., Eguchi and Fierbaugh render obvious all of the claimed subject matter as in claim 11, wherein:

Since fire hazard is a concern for the storage unit in a system such as taught by Granek et al., Powell et al, Eguchi and Fierbaugh by virtue of the need to implement the fire detection and suppressant system, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include a cover and/or a fire resistant blanket for the storage unit housing/wall so that said surface is the cover or blanket.

7. Claims 14-17 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al. and Sears (US pat. #6,032,745).

1) Regarding claim 14, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 2, while:

Sears teaches a popup device disposed between one of the application environment and the source of pressurized fire suppressant material to apply the material upon a fire condition (24 and col. 4, lines 22-38). While Granek et al. uses a valve 47, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that a known popup device and valve mechanism such as taught by Sears can also be used as an alternative for such a purpose, the choice depending on factors such as availability of parts at the time of implementation.

2) Regarding claim 15, Granek et al., Powell et al. and Sears made obvious all of the claimed subject matter as in claim 14, wherein:

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention that for relatively small storage units such as containers as an application environment of the system taught by Granek et al., Powell et al. and Sears, in order that the storage volume is not negatively impacted/reduced by being occupied by the fire suppressant and release components, they can be located exterior of the container such as outside the base of the container with a hole so that the popup device and valve aligned with the hole will discharge fire suppressant material into the container through the hole responsive to fire detection.

3) Regarding claim 16, Granek et al., Powell et al and Sears made obvious all of the claimed subject matter as in claim 14, wherein:

Granek et al. teaches a control unit 55 configured to transmit an activation signal to the valve mechanism 47 upon detecting the first signal for dispensing fire extinguishing material (Figs. 1 and 5), so that it would have been obvious to one of ordinary skill in the art at the time of the claimed invention that such activation signal in Granek et al., Powell et al and Sears would also activate the popup device in order for the fire extinguishing to commence.

Furthermore, Granek et al. discloses that the receiver 48 is located at a control unitl (55) that in response to the transmitted first signal identifies the storage unit experiencing the fire condition (Fig. 5; col. 4, lines 34-50 and col. 4, line 62 to col. 5, line 19). It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use one or more relay transceivers for receiving the first signals and transmitting second signals to the control unit for identification in a system such as taught by Granek et al., Powell et al. and Sears for application environments in which direct signal transmission is not feasible but requires relaying/retransmission in order to communicate between the storage unit transmitters and the control unit, such as due to physical or signal obstructions/interference, so that the signal detected by the control unit is the second signal.

4) Regarding claim 17, Granek et al., Powell et al. and Sears made obvious all of the claimed subject matter as in claim 16, including:

--the claimed control panel having a warning indicator wherein the control unit transmits an alert signal to the warning indicator on the panel (51 in Fig. 5 of Granek et al.).

5) Regarding claim 51, Granek et al., Powell et al. render obvious all of the claimed subject matter as in claim 44, plus the consideration of claim 14 in view of Sears.

8. Claims 24-26 and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granek et al. in view of Powell et al. and Wootton (US 3,848,231).

1) Regarding claims 24-25, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 18, while:

Wootton (Figs. 1 and 4) teaches the desirability to provide a remote indication of a detected fire condition ("DETECTORS", "FIRE" of Fig. 1) for situational awareness by

personnel for appropriate action, in which the control unit determines origin of fire detection signal and transmits another signal (indicator signal) to a control panel (display 235) indicating origin of the transmitted fire detection signal (col. 17, lines 33-38).

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include an origin-indication feature such as taught by Wootton in a fire detection, suppression and indication system such as taught by Granek et al. and Powell et al. for improved situational awareness by personnel for timely appropriate action.

2) Regarding claim 26, Granek et al., Powell et al. and Wootton render obvious all of the claimed subject matter as in claim 25, including:

--the claimed wherein the control unit transmits a fourth signal to the fire suppression device to discharge the fire suppressant material into the storage unit (Figs. 1 and 5; col. 4, lines 50-53 and col. 5, lines 4-19 of Granek et al.)

3) Regarding claims 56-58, Granek et al. and Powell et al. render obvious all of the claimed subject matter as in claim 52, plus the consideration of claims 24-26 further in view of Wootton.

Allowable Subject Matter

9. Claims 41-42 and 59 are allowed.

Response to Arguments

10. Applicant's arguments filed 4/19/05 regarding claims 1-26, 43-58 and 60-61 have been fully considered but they are not persuasive.

1) Claims 41-42 and 59 have been allowed.

2) Claims 1-26, 43-58 and 60-61 have been rejected under revised combination of two or more of Granek et al., Powell et al., Eguchi, Fierbaugh, Sears and Wootton, all using Granek et al. as primary reference, where Granek et al. does teach the claimed limitation of discharging fire suppressant material into the storage unit experiencing fire but not necessarily into other storage units", and the use of alternative wireless links including ultrasonic and radio waves. See above rejection for detail.

3) In conclusion, Applicant's arguments are not deemed persuasive with respect to the above revise/new ground of rejection, and the above rejection is maintained.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963. The examiner can normally be reached on Mon -Fri 11:00Am-7:30Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin C. Lee

Primary Examiner
Art Unit 2632

B.L.